

Alternative Fuels \$25 Million Incentives Program

**Air Resources Board Meeting
San Diego, CA
(May 24-25, 2007)**

California Environmental Protection Agency








Air Resources Board

Background

- ➡ ARB allocated \$25 million for alternative fuel and vehicles
- ➡ Budget control language provided to guide expenditures
- ➡ ARB/CEC jointly develop expenditure plan
- ➡ Funds to be expended this year
- ➡ 40 proposals recommended for approval

Budget Control Language (June 2006)

-  **Alternative fuel vehicles and fueling stations, including E-85 stations**
-  **Alternative fuel production incentives**
-  **Grants for research and development**
-  **No funds for fuels derived from petroleum, coke, or coal**
-  **Reduce air pollution and greenhouse gases**

Guiding Principles

- ➡ Advance California's state of knowledge
- ➡ Do meaningful demonstrations
- ➡ Increase in-state production of biofuels
- ➡ Deploy new products (e.g., plug-in hybrids) that would not otherwise exist
- ➡ No fuels derived from petroleum, coke, or coal
- ➡ Reduce air pollution and greenhouse gases

Guiding Principles (cont.)

- ➡ **Not for long-term research**
- ➡ **Not for existing commercially viable efforts**
- ➡ **Base recommendations on criteria & merit**
- ➡ **Flexibility to shift funding priorities to categories based on merit**
- ➡ **Matching funds expected for infrastructure**

Seven Categories Identified

- ➡ **E85 and other Alternative Fuel Projects**
- ➡ **Biofuels – Small Production Facilities**
- ➡ **Plug-in Hybrid and Alt Fuel Vehicles**
- ➡ **Transit Bus Projects**
- ➡ **Alt Fuel Vehicle Incentive Programs**
- ➡ **Consumer Education/Outreach**
- ➡ **Research and Testing**

Schedule

- ➡ **Public workshop:** September 21, 2006
- ➡ **Board briefing:** October 19, 2006
- ➡ **Solicitations issued:** February 9, 2007
- ➡ **Board considers awards:** May 24-25, 2007
- ➡ **Funds encumbered:** June 30, 2007
- ➡ **Funds expended:** June 30, 2009
- ➡ **Reports to the Legislature**

Solicitations for Proposals

- ➡ **Solicitations sent February 9, 2007**
- ➡ **Received 208 responses**
- ➡ **\$160 million requested**
- ➡ **Proposals reviewed by multi-state agency review team**

General Criteria for Rating

- ➡ **Project cost**
- ➡ **Complete in two years**
- ➡ **Alternative fuels**
- ➡ **Funding source**
- ➡ **Application completeness**

Specific Criteria for Rating

Categories A and B

- Small business
- Technical information to support the ability to complete the project in two years

Categories C, D, E, and F

- Knowledge and experience
- Availability of technology
- Business parameters and operation

Summary

- ➡ **208 applications were evaluated**
- ➡ **About 170 applications were acceptable, on time, and complete**
- ➡ **Multi-state agency team recommend 40 projects be funded**

RECOMMENDATIONS

Alternative Fueling Infrastructure Category A



Summary of Alternative Fueling Infrastructure Proposals

- ➡ **Allocated \$7.0 million**
- ➡ **38 proposals/\$26 million requested**
- ➡ **10 recommended proposals with 51 stations**
- ➡ **\$5.4 million recommended funding**
- ➡ **\$2.7 million match funding**
- ➡ **3 additional proposals identified if funding available: \$520,000**

Proposals Recommended for Funding

- ☞ **Sacramento Metropolitan Area E85 Stations**
 - Sacramento Metropolitan AQMD
 - \$3,500,000

- ☞ **Retail E85 Stations Located Along Highway 101 and I-405**
 - Community Environmental Council and Calstart
 - \$580,000

- ☞ **Retail E85 Stations Modeled after RTC established throughout California**
 - RTC Fuels, LLC dba Pearson Fuels
 - \$802,776

Proposals Recommended for Funding (cont)

- ☞ Retail Cardlock B99 Station in Orange County**
 - Nickey Petroleum Co., Inc.
 - \$13,994
- ☞ Retail and Fleet Electric Vehicle Recharging Stalls throughout California**
 - Pacific Gas & Electric
 - \$175,000
- ☞ Retail and City Fleet Use E85 Station in Tulare**
 - City of Tulare
 - \$106,000

Proposals Recommended for Funding (cont)

Fleet E85 Station at UC Davis

- UC Davis Fleet Services
- \$70,000

Fleet CNG Station Upgrade (two new dispensers) for City of San Francisco

- City & County of San Francisco Department of the Environment
- \$53,600

Proposals Recommended for Funding (cont)

- ➡ **Fleet CNG Station Upgrade (two new tanks)
for City of San Francisco**
 - City & County of San Francisco Department of
the Environment
 - \$57,280

- ➡ **Fleet E85 Station for Los Angeles County
FFV Fleet**
 - County of Los Angeles Internal Services
Department
 - \$8,300

Proposals Recommended – If Additional Funding is Available

- ☞ Fleet E85 Stations Installed in Imperial Valley**
 - Imperial Valley Biorefining, Inc.
 - \$210,000
- ☞ GTL Fuel (Fischer-Tropsch) Bus Demo Project**
 - Shell International Petroleum Co., Ltd
 - \$240,000
- ☞ Fleet/Wholesale Bulk Distribution Center for B5 and B20**
 - Robert V. Jensen, Inc.
 - \$70,000

Biofuels Production Category B



Summary of Biofuels Production Proposals

- ➡ **Allocated \$5 million**
- ➡ **50 proposals/\$43.0 million requested**
- ➡ **10 recommended proposals**
- ➡ **\$6.0 million recommended funding**
- ➡ **\$68 million match funding**
- ➡ **6 additional proposals identified if
funding available: \$5.6 million**

Proposals Recommended for Funding

- ☞ **Convert Dairy Waste into Biofuel (Bakersfield)**
 - Crimson/Byogy Group
 - \$650,000

- ☞ **Produce Methane from Dairy Digester to Power Converted Diesel Milk Trucks and Generate Electricity (Tulare County)**
 - Hilarides Dairy
 - \$600,000

- ☞ **Convert Landfill Gas Generated at Bowerman Landfill to Liquefied Natural Gas (LNG) (Orange County)**
 - Prometheus Energy
 - \$640,000

Proposals Recommended for Funding (cont)

- ➡ **Convert Landfill Gas Generated at Altamont Landfill to Liquefied Natural Gas (LNG) (Livermore)**
 - GTI/Waste Management, Inc./Linde BOC
 - \$610,000
- ➡ **10 MM Gallons Per Year Biodiesel Plant (Oakland)**
 - Blue Sky Bio-Fuels
 - \$620,000
- ➡ **MM Gallons Per Year Biodiesel Plant (Pacifica)**
 - Whole Energy Fuels
 - \$620,000

Proposals Recommended for Funding (cont)

- ➡ **10 MM Gallons Per Year Biodiesel Plant
(Sacramento)**
 - Prima Fuel
 - \$640,000

- ➡ **1.7 MM Gallons Per Year Biodiesel Plant
(San Diego)**
 - New Leaf Biofuels
 - \$590,000

Proposals Recommended for Funding (cont)

- ➡ **5 MM Gallons Per Year Biodiesel Plant
(Chilcoot)**
 - Simple Fuels
 - \$400,000
- ➡ **10 MM Gallons Per Year Biodiesel Plant
(Santa Fe Springs)**
 - Renewable Energy
 - \$630,000

Proposals Recommended – If Additional Funding is Available

- ☞ Upgrade Biogas from Wastewater Digester to Fuel HD Trucks (Hilmar)**
 - Sustainable Conservation Hilmar Cheese
 - \$649,000
- ☞ 7.5 MM Gallons Per Year Biodiesel Plant (Stockton)**
 - American Biodiesel
 - \$1,000,000
- ☞ 2.5 MM Gallons Per Year Biodiesel Plant (Madera)**
 - Pacific Ethanol
 - \$1,000,000

Proposals Recommended – If Additional Funding is Available (cont)

- ☞ 30 MM Gallons Per Year Biodiesel Plant (Stockton)**
 - Crimson Renewable Energy
 - \$1,000,000
- ☞ 30 MM Gallons Per Year Biodiesel Plant (San Pedro)**
 - Renewable Energy
 - \$1,000,000
- ☞ 30 MM Gallons Per Year Biodiesel Plant (Bakersfield)**
 - Crimson Renewable Energy
 - \$1,000,000

Plug-in Hybrids (PHEVs) Category C



Summary of Plug-In Hybrid Proposals

- ➡ **Allocated \$5 million**
- ➡ **78 proposals/\$56 million requested**
- ➡ **7 recommended proposals**
- ➡ **\$5.0 million recommended funding**
- ➡ **\$7.5 million match funding**
- ➡ **2 additional proposals identified if funding available: \$2.0 million**

Highest Priority Proposal Topics

- ➡ **Passenger car and Light-duty truck plug-in vehicle (PHEV) demos:**
 - Consumer acceptance, user behavior, marketability
 - PHEV system or component evaluation
- ➡ **Battery technology readiness for PHEVs**
- ➡ **PHEV certification testing**
- ➡ **Charging infrastructure issues**

Proposals Recommended

- ☞ **California Clean Mobility Partnership**
 - UC Irvine and UC Berkeley
 - \$1,103,000

- ☞ **Commercial Medium Power Charging Station**
 - Tesla Motor
 - \$561,000

- ☞ **Emerging Battery Technologies for PHEVs**
 - Electric Power Research Institute (EPRI)/ UC Davis
 - \$344,000

Proposals Recommended

- ☞ **PHEV Demonstration and Consumer Education, Outreach, and Market Research**
 - UC Davis PHEV Center
 - \$1,500,000
- ☞ **SAE Formula Hybrid Sponsorships**
 - Plug in America
 - \$142,000
- ☞ **EV Television Show Pilot Episode**
 - ZEV Research
 - \$150,000

Proposals Recommended

Medium-Duty Vehicle PHEV Demonstration

- Electric Power Research Institute (EPRI)/ Eaton
- \$1,200,000

Proposals Recommended – If Additional Funding is Available

☞ PHEV Charging Infrastructure and Battery Technology Demonstration

- AeroVironment**
- \$1,020,000**

☞ Advanced BEV Battery Testing

- Tesla Motors**
- \$963,000**

Transit Bus Projects Category D



Summary of Transit Bus Proposals

Category D

- ➡ Allocated \$2.0 million
- ➡ 8 proposals/\$9.7 million requested
- ➡ 2 recommended proposals
- ➡ \$2.0 million recommended funding
- ➡ \$17 million match funding
- ➡ 2 additional proposals identified if funding available: \$2.2 million

Proposals Recommended

City of Burbank

- H2 Fuel Cell Plug-in Hybrid Bus
- \$1,370,000

Metropolitan Transportation Commission

- 12 New Generation Fuel Cell Hybrid Buses
- \$630,000 (Partial Funding)

Proposals Recommended – If Additional Funding is Available

Metropolitan Transportation Commission

– \$1,370,000 (Up to the Remaining Funding)

SunLine

– \$873,462

Vehicle Incentive Program Category E



NEV



CNG



EV

PHEV

FCEV



Summary of Vehicle Incentive Program Proposals Category E

- 👉 Program: Allocated \$1,500,000**
 - Up to 10 percent for administration costs**
- 👉 Will provide several hundred grants**
- 👉 4 proposals submitted**
- 👉 1 administrator selected**
- 👉 Program likely oversubscribed by 2009**

Recommended Proposal

San Diego Regional Energy Office

- \$1,500,000

Highlights:

- Greatest grant experience
- Strong vehicle experience
- Innovative use of match funding

Consumer Education and Outreach Category F



Summary of Consumer Education and Outreach Proposals Category F

- ➡ **Allocated \$1.6 million**
 - Consumer Marketing Campaign: \$1.0 million
 - Education Program: Allocated \$0.6 million
- ➡ **36 proposals/\$23.3 million requested**
- ➡ **4 recommended projects**
- ➡ **\$1.6 million recommended funding**
- ➡ **\$0.3 million match funding**
- ➡ **1 additional project identified if funding available: \$60,000**



Proposals Recommended Consumer Marketing Campaign

-  **Ogilvy Public Relations Worldwide:
\$1,000,000**
 - **Develop statewide consumer marketing campaign**
 - **Address barriers to consumer acceptance of cleaner vehicles and fuels**

Proposals Recommended Education Programs

- ➡ **San Diego Environmental Foundation:
\$400,000**
- ➡ **Office of the State Fire Marshal:
\$171,000**
- ➡ **Central Coast Clean Cities Coalition:
\$29,000**

Proposals Recommended If Additional Funding is Available

-  **Priority: augment funding for statewide consumer campaign**
-  **San Diego Unified School District:
\$60,000**

Research and Testing

Summary of Research and Testing

- ➡ **Funding Allocated: \$3.3 million**
- ➡ **Recommended Funding: \$3,239,000**
- ➡ **6 Projects Proposed**

Certification Test Procedure & Technical Evaluation Hybrids & PHEVs

- ☞ UC Irvine, ARB, & Other Participants**
- ☞ Project Cost: \$1,050,000**
- ☞ Define appropriate duty cycles, identify instrumentation & testing protocols, and procure a variety of Alt. fuel vehicles**

Biodiesel NOx Formation & Mitigation Study

- ☞ UC Riverside – College of Engineering – Center for Environmental Research & Technology (CE-CERT)**
- ☞ Project Cost: \$1,689,000**
 - Phase 1: \$1,270,000**
 - Phase 2: \$419,000**
- ☞ Directly address impacts of biodiesel use; Evaluate the NOx mitigation strategies**

Biodiesel Multimedia Assessment

- ➡ UC Berkeley & UC Davis
- ➡ Project Cost: \$100,000
 - UCB: \$30,000
 - UCD: \$70,000
- ➡ UCB will focus on life-cycle methodology, motor vehicle & emissions/GHG issues
- ➡ UCD will focus on regulatory impact, subsurface and groundwater fate & transport, aquatic toxicology, biodegradation, & human health effects

Biofuel Fueling Equipment Research & Development Program

👉 **CleanFUEL USA**

👉 **Project Cost: \$400,000**

👉 **Coordinate the design, testing & development of E85 dispensing equipment/systems for submittal to UL for certification**

Summary of Allocations

Alternative Fuel Infrastructure	\$5.4 million
Biofuels Production	\$6.0 million
Plug-in Hybrids	\$5.0 million
Transit Buses	\$2.0 million
Alt Fuel Vehicle Incentives	\$1.5 million
Consumer Education/Outreach	\$1.6 million
Research and Testing	\$3.2 million
Total Funding:	\$24.7 million

Recommendations

- ➡ **Approve multi-state agency project recommendations**
- ➡ **Approve Resolution 07-16**